PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE HONORABLE BOARD OF PATENT APPEALS AND INTERFERENCES

In re the Application of

Noriyoshi OKUZONO et al.

Application No.: 10/596,724 Examiner: D. NGUYEN

Filed: June 22, 2006 Docket No.: 145181

For: CORE FOR WASHING SPONGE ROLLER

BRIEF ON APPEAL

Appeal from Group 3723

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I. REAL PARTY IN INTEREST

The real party in interest for this appeal and the present application is Aion Co., Ltd., by way of an Assignment recorded in the U.S. Patent and Trademark Office at Reel 017842, Frame 0235.

II. RELATED APPEALS AND INTERFERENCES

There are no prior or pending appeals, interferences or judicial proceedings, known to Appellant, Appellant's representative, or the Assignee, that may be related to, or that will directly affect or be directly affected by or have a bearing upon, the Board's decision in the pending appeal.

III. STATUS OF CLAIMS

Claims 1 and 3-6 are pending.

Claim 2 has been canceled.

Claims 1 and 3-6 are on appeal.

Claims 1 and 3-6 are rejected.

IV. STATUS OF AMENDMENTS

A Request For Reconsideration After Final Rejection was filed on October 15, 2010. An Advisory Action was issued on October 25, 2010, maintaining the rejection in the Final Rejection. A Pre-Appeal Brief Request For Review was filed on December 15, 2010. A Panel Decision was issued on January 21, 2011 indicating that the claims remain rejected and the application should proceed to the Board of Patent Appeals and Interferences.

V. SUMMARY OF CLAIMED SUBJECT MATTER

Claim 1 is directed to a core (1) for a cleaning sponge roller [Fig. 1A and page 1, lines 1-2]. The core (1) is in a substantially cylindrical shape [Fig. 1B and page 3, line 28]. The core (1) comprises: a bore (2) [Fig. 1A and page 4, line 23] extending in an axial direction [page 4, line 3] and a plurality of small holes (3) [Fig. 1A and page 4, line 24] communicating between the bore (2) and a circumferential outer surface (5) of the core (1) [Fig. 1A and page 4, line 24], the plurality of small holes (3) are distributed both in a circumferential direction and in an axial direction of the core (1) [page 5, lines 14-16] and aligned along straight lines in the axial direction [Fig. 1A and page 5, line 16], small holes in one of the straight lines and small holes (3) in a straight line adjacent to the one of the straight lines are arranged on one and the same circumference of the core (1) [Fig. 1A and page 5, lines17-18]; and grooves (4, 4', 4") [Fig. 1A and page 5, line 21] recessed in the circumferential outer surface of the core (1) [Fig. 1A and page 5, lines 21-22] and extending in the axial direction of the core (1) [Fig. 1A and page 5, lines 21-22], the small holes (3) opening into the grooves (4, 4', 4") [Fig. 1A and page 5, lines 21-28]. A diameter of the bore (2) is 10 to 20 mm [page 4, line 25]. A diameter of the small holes (3) is 2.5 to 5 mm [page 4, lines 26-27] and a total of cross-sectional areas of the plurality of the small holes (3) is 1.2 to 5 times larger than a cross-sectional area of the bore (2) [page 4, line 27 to page 5, line 1].

Applicants respectfully submit that the above annotations are made with reference to the original specification, are exemplary and not intended to be limiting.

For convenience, Fig. 1A is reproduced below:

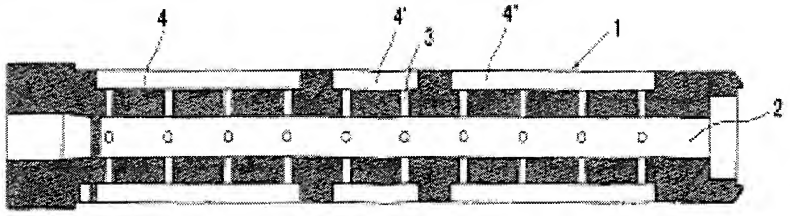

Fig. 1A

Configuration And Properties Of The Claim 1 Core

The recited core for cleaning a sponge roller of claim 1 provides benefits such as, for example, allowing for the possibility of reducing a pressure loss of fluid in the small holes, thus allowing for a lower total pressure to be used. See page 5, lines 6-8 of the specification. By having the lower pressure, a cleaning fluid may spread gradually into a sponge roller through the small holes and, the cleaning fluid may be supplied uniformly over the entire surface of the sponge roller without the cleaning fluid flowing out locally over an outer surface of the sponge roller. See page 5, lines 8-11 of the specification. Further benefits include the ability to quickly change the cleaning fluid in the core. See page 5, lines 11-13 of the specification.

Conventional core designs include a first plurality of holes that are located at a position offset in an axial direction (along a different circumference) relative to a second plurality of holes located in channels that are recessed in the outer surface of the core. See page 2, lines 16-22 (referencing Dickey (U.S. Patent No. 6,240,588)) of the specification. The conventional designs may also have a bore of a smaller diameter, such as from 0.060-0.35 inches (1.524-8.89 mm). See page 2, lines 22-23 (referencing Dickey) of the specification. In such conventional designs, a problem arises that a supply of a cleaning fluid from the core to a sponge roller is non-uniform and thus the cleaning fluid was not evenly distributed over the outer surface of the sponge roller. See page 3, lines 11-13 of the

specification. Further, in conventional designs, when changing from one cleaning fluid to another, a problem arose that the previously used cleaning fluid remains in the bore of the core or in the sponge roller, which increased the amount of time needed to change the cleaning fluid. See page 3, lines 14-17 of the specification.

However, the core of claim 1 has (i) small holes in one of the straight lines and small holes in a straight line adjacent to the one of the straight lines that are arranged on one and the same circumference (not offset) of the core [Fig. 1A and page 5, lines17-18 of the specification]; (ii) a diameter of the bore that is 10 to 20 mm [page 4, line 25]; (iii) a diameter of the small holes that is 2.5 to 5 mm [page 4, lines 26-27] and (iv) a total of cross-sectional areas of the plurality of the small holes that is 1.2 to 5 times larger than a cross-sectional area of the bore [page 4, line 27 to page 5, line 1]. Thus, at least these features of claim 1 provide benefits such as the reduced pressure, even distribution of cleaning fluid and ability to quickly change the cleaning fluid, as detailed above. See page 5, lines 8-13 of the specification.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The following grounds of rejection are presented for review:

1) Claims 1 and 3-6 are rejected as allegedly having been obvious under 35 U.S.C. §103(a) over Dickey (U.S. Patent No. 6,240,588).

VII. ARGUMENT

The Examiner rejected claims 1 and 3-6 as allegedly having been obvious under 35 U.S.C. §103(a) over Dickey (U.S. Patent No. 6,240,588). The Examiner's rejection is based upon errors in fact surrounding the teachings of the prior art, and the rejection should be withdrawn.

A. The Recited Arrangement Of The Small Holes Of Claim 1 Are Not Obvious Over Dickey

Claim 1 recites that small holes in one of the axial direction straight lines and small holes in an axial direction straight line adjacent to the one of the straight lines are arranged on one and the same circumference of the core. For reference, as shown in Fig. 1A of the present application (reproduced below), small holes (3) in one of the axial direction straight lines and small holes in an axial direction straight line adjacent to the one of the straight lines are arranged on one and the same circumference of the core (i.e., the small holes in one of the axial direction straight lines and small holes in an axial direction straight line adjacent to the one of the straight lines are not offset).

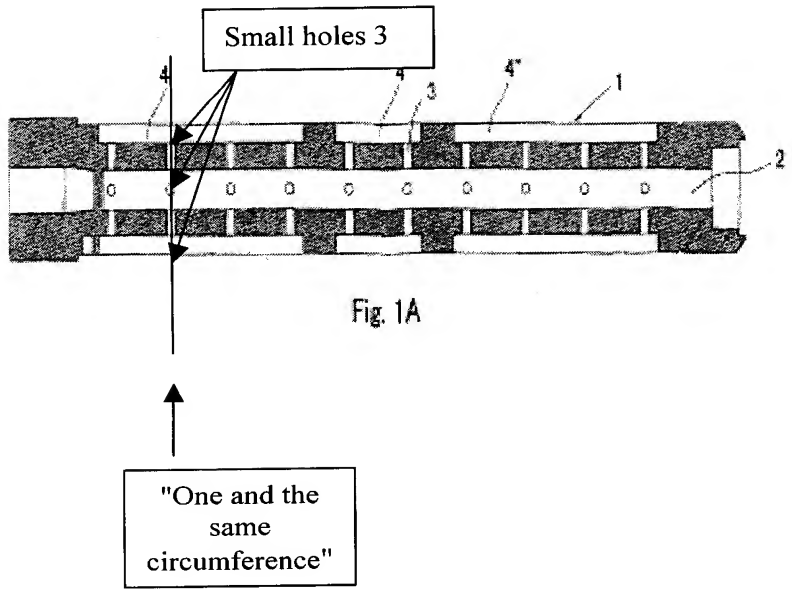

Fig. 1A

1. **The Holes Of Dickey Must Be Offset**

The above arrangement of the small holes is very different from Dickey. Dickey describes that holes 260 of adjacent axial direction channels 252 are shifted in the axial direction by an amount that is equal to about half the separation distance between holes of the first channel. See Fig. 3, Fig. 6 and col. 6, lines 14-16 of Dickey. Figs. 3 and 6 of Dickey are reproduced below for reference.

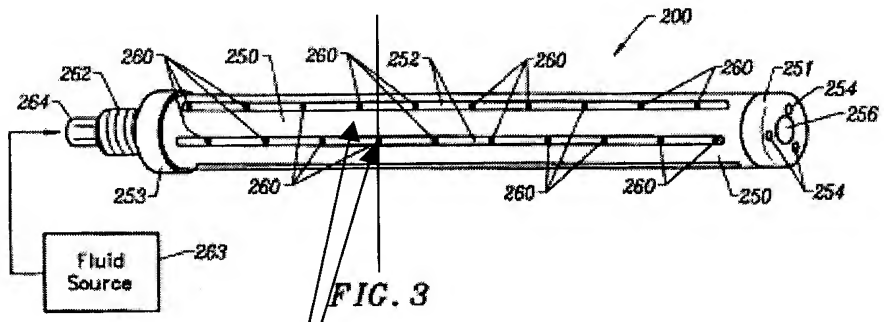

FIG. 3

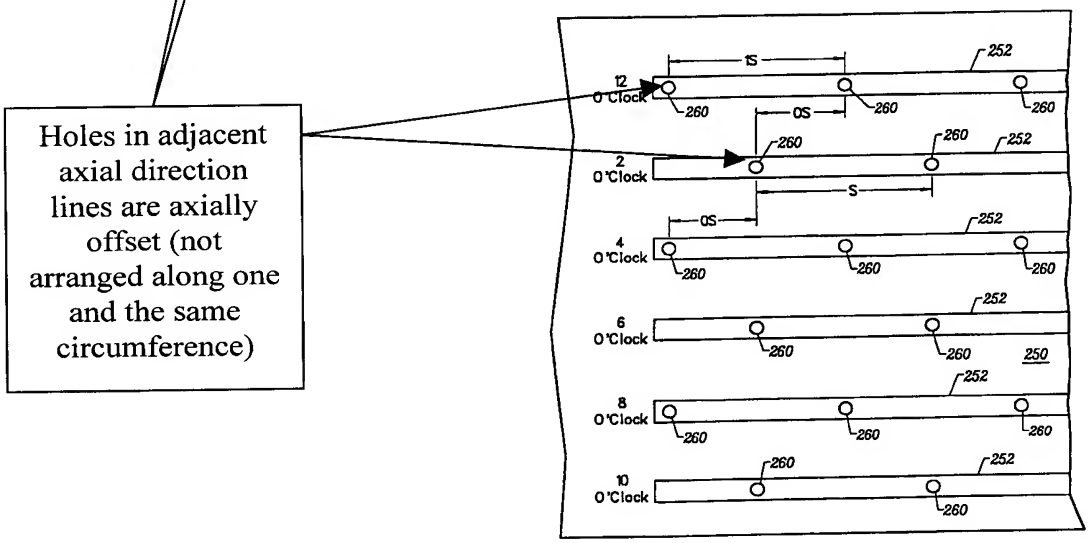

FIG. 6

Dickey describes that the offset may be modified, so long as some offset orientation is maintained to ensure even distribution of a fluid that may be provided into the bore 270. See col. 8, lines 15-19 of Dickey.

Thus, Dickey does not describe that at least small holes in one of the axial direction straight lines and small holes in an axial direction straight line adjacent to the one of the straight lines are arranged on one and the same circumference of the core, as recited in claim 1.

2. Dickey Teaches Away From Using Non-Offset Holes

As summarized in the MPEP "a prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention." See MPEP §2142.01(VI) citing *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983). Further, if the prior art reference "criticizes, discredits or otherwise discourages" a particular solution, the prior art teaches away from that solution. See MPEP §2142.01(VI) citing *In re Fulton*, 391 F.3d 1195, 1201, 73 USPQ2d 1141, 1146 (Fed. Cir. 2004).

Dickey teaches away from using the recited arrangement of small holes. Dickey describes that holes 12a of known brush cores 12 are arranged such that one hole 12a' is directly opposite of another hole 12a' (not offset), and that the non-offset arrangement is undesirable because the non-offset arrangement contributes to a higher outflow of fluids near the fluid input end 16, than at the opposite end. See col. 2, lines 55-59 and Fig. 1A of Dickey. In other words, Dickey criticizes/discredits the use of non-offset holes because Dickey indicates that non-offset holes lead to undesirable results.

Thus, Dickey teaches away from an arrangement of holes that are not offset. For this additional reason, Dickey does not describe or provide any reason or rationale for one of ordinary skill in the art to have come to small holes in one of the axial direction straight lines and small holes in an axial direction straight line adjacent to the one of the straight lines being arranged on one and the same circumference of the core, as recited in claim 1.

3. Modifying Dickey To Have No Offset Would Have Rendered Dickey Unsuitable For Its Intended Purpose

Because Dickey describes that the holes must be offset to some degree, one of ordinary skill in the art would not have had any reason or rationale to have attempted to have modified Dickey to have small holes in one of the axial direction straight lines and small holes in an axial direction straight line adjacent to the one of the straight lines arranged on one and the same circumference of the core, as recited in claim 1, because such change would have rendered Dickey unsuitable for its intended purpose (having offset holes to provide the even distribution through the holes).

4. The Examiner Has Not Addressed The Recited Arrangement Of Small Holes

The Examiner has ignored the recited limitation of small holes in one of the axial direction straight lines and small holes in an axial direction straight line adjacent to the one of the straight lines being arranged on one and the same circumference of the core, as recited in claim 1.

The Final Rejection is completely silent as to this limitation of claim 1, and as to how Dickey allegedly would have rendered obvious this required limitation of claim 1.

Thus, the Examiner's Final Rejection has not set forth a *prima facie* case of obviousness, in that each and every limitation is not indicated to have been obvious over Dickey.

B. The Recited Ranges In Claim 1 Are Non-Obvious

The Examiner admits that Dickey fails to disclose ranges of parameters (diameter of the bore, diameter of the small holes, and the ratio of the cross-sectional areas of the small holes and the bore) that overlap or lie completely within the claimed ranges of independent claim 1. See page 2, last 6 lines, of the Office Action.

1. **Dickey Requires A Hole And Bore Diameter Outside Of The Claimed Range**

Dickey discloses that the bore has a diameter between 0.060 and 0.35 inches (1.54 to 8.89 mm), which is below and outside of the claimed range of 10 to 20 mm recited in claim 1. See col. 7, lines 16-20 of Dickey. Dickey describes that brush cores of the prior art have a bore diameter of 0.36 inches (only 0.01 inch smaller than the bore of Dickey). See col. 2, lines 42-43 of Dickey. Dickey describes that "it should be noted that the diameter of the bore 270 is substantially smaller than that typically used or suggested for brush cores of the prior art." See col. 7, lines 20-23 of Dickey. Thus, Dickey describes that the 0.35 inch bore diameter is the maximum diameter that can be used to achieve the desired results of Dickey and indicates that a brush diameter of 0.36 inches (9.14 mm) is substantially larger than 0.35 inches.

Further, Dickey describes that decreasing the diameter of the bore allows for rapidly filling the volume of the brush core. See col. 7, lines 22-25 of Dickey. Thus, one of ordinary skill in the art would not have had any reason or rationale to have increased the diameter of the bore to the recited range of 10 to 20 mm and the claimed range would not have been obvious from Dickey in view of Dickey indicating that diameters of 9.14 mm are substantially larger and not desired.

Regarding the small holes, Dickey describes that the holes should have a diameter ranging between 0.005 and 0.092 inches (0.127 to 2.33 mm), which is also below and outside the range of 2.5 to 5 mm recited in claim 1. See col. 7, lines 30-32 of Dickey. Dickey further describes that the diameter of the holes is substantially reduced, in conjunction with the reduced bore size, to provide a more even distribution of fluid to the brush core. See col. 7, lines 33-38 of Dickey. Thus, as Dickey requires the use of holes having a diameter ranging between 0.127 to 2.33 mm, Dickey also does not provide any reason or rationale for one of

ordinary skill in the art to have increased the diameter of the holes to be within the range of 2.5 to 5 mm recited in claim 1.

Thus, Dickey does not describe or provide any reason or rationale for one of ordinary skill in the art to have come to a diameter of the bore being 10 to 20 mm and a diameter of the small holes being 2.5 to 5 mm, as recited in claim 1.

2. The Recited Ratio Of Cross-Sectional Areas Of Claim 1 Is Non-Obvious

The Examiner has failed to establish a *prima facie* case of obviousness with respect to the feature "a total of cross-sectional areas of the plurality of the small holes is 1.2 to 5 times larger than a cross-sectional area of the bore," as recited in claim 1.

Even if Dickey discloses the claimed range of diameters for the bore (which it does not), and the claimed range of diameters for the small holes (which it also does not), Dickey still fails to disclose the recited ratio of the total of cross-sectional areas of the plurality of the small holes being 1.2 to 5 times larger than a cross-sectional area of the bore, or disclose any reason or benefit to be achieved from varying or controlling that ratio.

Dickey provides no motivation for one to control a total of cross-sectional area of the holes compared to a cross-sectional area of the bore, nor does Dickey provide sufficient guidance for one to have attempted to calculate the recited ratio of cross-sectional areas.

Thus, Dickey also does not describe or provide any reason or rationale for one of ordinary skill in the art to have come to a total of cross-sectional areas of the plurality of the small holes being 1.2 to 5 times larger than a cross-sectional area of the bore, as recited in claim 1.

3. The Examiner Has Not Established A *Prima Facie* Case Of Obviousness

A *prima facie* case of obviousness can be established for a claimed range of parameters if the prior art discloses a range that partially overlaps with or lies completely

within the claimed range (see MPEP §2144.05(I)). If the prior art fails to disclose such a range, a *prima facie* case of obviousness can only be established if the general conditions of a claim are shown in the art, and where the claimed range of parameters is a mere optimization of the general conditions (see MPEP §2144.05(II)).

In this instance, Dickey would not have provided one of ordinary skill in the art any reason or rationale to have attempted to modify (optimize) the parameters (the diameter of the bore, the diameter of the small holes, and the ratio of the total cross-sectional area of the holes and the cross-sectional area of the bore) of Dickey to achieve a diameter of the bore being 10 to 20 mm, a diameter of the small holes being 2.5 to 5 mm and a total of cross-sectional areas of the plurality of the small holes being 1.2 to 5 times larger than a cross-sectional area of the bore, as recited in claim 1.

As detailed above, Dickey describes ranges that are below and outside the ranges recited in claim 1. Further, Dickey describes decreasing a diameter of small holes located downstream of the core in order to increase the pressure of the cleaning liquid flowing through the core. Dickey further describes that the diameter of the holes and the bore size being substantially reduced to provide a more even distribution of fluid to the brush core. Dickey does not describe or provide any reason or rationale for one of ordinary skill in the art to have increased the diameters of the holes and bore size of Dickey to have come to the recited ranges of claim 1.

Thus, the Examiner has failed to establish a *prima facie* case of obviousness with respect to the recited features of a diameter of the bore being 10 to 20 mm, a diameter of the small holes being 2.5 to 5 mm and a total of cross-sectional areas of the plurality of the small holes being 1.2 to 5 times larger than a cross-sectional area of the bore, as recited in claim 1.

Thus, the Examiner has not established a *prima facie* case of obviousness and the rejection should be withdrawn.

C. The Advisory Action Mischaracterizes Appellants' Arguments

The Advisory Action mischaracterizes Appellant's arguments in the October 15, 2010 Request For Reconsideration After Final Rejection, by stating "Applicant argues that Applicant need not show criticality for the claimed range of parameters unless (1) the parameter is recognized as a result-effective variables, and (2) the claimed range is a mere optimization of the result-effective variable." The Examiner then continues to mischaracterize Appellant's arguments by alleging "applicant does not show any variable in the claims in which is Applicant considered as a result-effective variable."

The Examiner's allegations are erroneous for several reasons. The Examiner has the burden to provide evidence that the claimed ranges of parameters are result-effective variables. Indeed, the burden is always placed on the Examiner to establish a *prima facie* case of obviousness when rejecting a claim under 35 U.S.C. §103(a) (see MPEP §2144.08(II)(A)).

Also, the statement "Applicant does not show any variable in the claims in which is Applicant considered as a result-effective variable" is without merit. The specification describes the recited diameters and ranges as the "characterizing" aspect of the invention, for example, at page 4, lines 2-5 and page 4, line 24 to page 5, line 13. Further, in the October 15, 2010 Request For Reconsideration After Final Rejection, Appellant provided the explanation that the core of claim 1 has a structure that does not increase the pressure of the fluid flowing downstream but feeds the fluid gently to a sponge roller. See page 4, lines 5-7 of the October 15 RRAFR citing page 5, lines 6-13 of the specification.

Thus, the Examiner has not established a *prima facie* case of obviousness and instead merely mischaracterizes Appellant's arguments.

VIII. CONCLUSION

For all of the reasons discussed above, it is respectfully submitted that the rejections are in error and that claims 1 and 3-6 are in condition for allowance. For all of the above reasons, Appellants respectfully request this Honorable Board to reverse the rejections of claims 1 and 3-6.

Respectfully submitted,

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APPENDIX A - CLAIMS APPENDIX

CLAIMS INVOLVED IN THE APPEAL:

1. A core for a cleaning sponge roller, the core being in a substantially cylindrical shape comprising:

a bore extending in an axial direction and a plurality of small holes communicating between the bore and a circumferential outer surface of the core, the plurality of small holes are distributed both in a circumferential direction and in an axial direction of the core and aligned along straight lines in the axial direction, small holes in one of the straight lines and small holes in a straight line adjacent to the one of the straight lines are arranged on one and the same circumference of the core; and

grooves recessed in the circumferential outer surface of the core and extending in the axial direction of the core, the small holes opening into the grooves,

wherein:

a diameter of the bore is 10 to 20 mm;

a diameter of the small holes is 2.5 to 5 mm; and

a total of cross-sectional areas of the plurality of the small holes is 1.2 to 5 times larger than a cross-sectional area of the bore.

3. A core for a cleaning sponge roller as in claim 1, wherein the number of the small holes opening into one groove is 2 to 5.

4. A core for a cleaning sponge roller as in claim 3, wherein the number of the small holes opening into one groove in the axial direction of the core takes a repeat pattern of 2, 3, or 4, or a pattern of 2 and 3, 2 and 4, or 3 and 4.

5. A core for a cleaning sponge roller as in claim 3, wherein in the circumferential direction of the core, either four or six grooves are positioned at even

intervals, and different numbers of the small holes open into the adjacent grooves, where the number of the small holes takes a repeat pattern in the circumferential direction of the core.

6. A core for a cleaning sponge roller as in claim 1, wherein at least one flange is attached either to one end or to both ends of the core.

APPENDIX B - EVIDENCE APPENDIX

NONE

APPENDIX C - RELATED PROCEEDINGS APPENDIX

NONE